Patent claims

1. A device for driving boreholes in the ground, having a rotationally driven main shaft (12) comprising a shaft journal (11) whose axis (B) forms an acute angle (w) with respect to the axis (A) of the main shaft (12), and having a drill head (1) which is mounted such that it can rotate about the axis (B) of the shaft journal (11) and has a circumferential region (18) which runs on a complementary circumferential region (19), characterized in that the complementary circumferential region (19) can be set rotating.

2. The device as claimed in claim 1, characterized in that the circumferential region (18) has an external tooth system and the complementary circumferential region (19) has an internal tooth system.

3. The device as claimed in claim 1 or 2, characterized in that the complementary circumferential region (19) is formed by a hollow wheel (21) arranged concentrically with respect to the axis (A) of the main shaft (12).

4. The device as claimed in one of claims 1 to 3, characterized in that the complementary circumferential region (19) can be set rotating by means of a planet gear mechanism (28) in engagement with the main shaft (12).

5. The device as claimed in one of claims 1 to 3, characterized in that the complementary circumferential region (19) can be set rotating by means of a separate drive independently of the main shaft (12).

6. The device as claimed in claim 5, characterized in that the separate drive can be controlled or regulated.

7. The device as claimed in one of claims 1 to 6, characterized in that means are provided using which the advance of the drill can be set rotating as a function of the output of the rotary drive of the main shaft.

8. The device as claimed in claim 7, characterized in that the input drive can be controlled or regulated.

9. The device as claimed in one of claims 1 to 8, characterized in that means are provided using which the advance of the drill can be controlled or regulated as a function of the output of the rotary drive of the main shaft.

10. The device as claimed in claim 9, in which the drill is advanced and the main shaft is driven in rotation using a hydraulic medium, characterized in that means are provided which control or regulate the hydraulic pressures for effecting the advance of the drill and for driving the main shaft in rotation.

11. The device for driving boreholes in the ground, having a rotationally driven main shaft (12) comprising a shaft journal (11) whose axis (B) forms an acute angle (w) with respect to the axis (A) of the main shaft (12), and having a drill head (1) which is mounted such that it can rotate about the axis (B) of the shaft journal (11) and has a circumferential region (18) which runs on a complementary circumferential region (19), in particular as claimed in one of claims 1 to 10, characterized in that the drill head (1) is of multipart design such that the part of the drill head subjected to wear can be

separated from the part of the drill head that causes the drill head to bear on the shaft journal (11).

12. The device as claimed in claim 11, characterized in that the drill head (1) comprises a central bearing part (3) and a tool part (30) fastened detachably thereto.

13. The device as claimed in claim 12, characterized in that the tool part (30) is fastened to the bearing part (3) by means of screws uniformly distributed over a pitch circle.

14. The device for driving boreholes in the ground, having a rotationally driven main shaft (12) comprising a shaft journal (11) whose axis (B) forms an acute angle (w) with respect to the axis (A) of the main shaft (12), and having a drill head (1) working in a drill head space (O), which is mounted such that it can rotate about the axis (B) of the shaft journal (11) in a bearing arrangement (40) and has a circumferential region (18) which runs on a complementary circumferential region (19), in particular as claimed in one of claims 1 to 13, characterized in that a sealing arrangement (50) is provided which at least substantially seals the bearing arrangement (40) relative to the drill head space (O).

15. The device as claimed in claim 14, characterized in that the sealing arrangement (50) comprises an elastic bellows (51).

16. The device as claimed in claim 14 or 15, characterized in that the sealing arrangement comprises a sliding ring seal.

17. A device for driving boreholes in the ground, having a rotationally driven drill head (1) working in a drill head space (O) and carrying

out a wobbling movement in addition to the rotary movement, and having a conveying line (10) which leads into the drill head space (O) by way of its receiving end (12) and is intended for transporting away detached drilled material from the drill head space (O), in particular as claimed in one of claims 1 to 16, characterized in that the drill head (1) and the receiving end (12) of the conveying line (10) are designed in such a way that drilled material situated prior to the receiving end (12) is mechanically transported into the conveying line (10) by reason of the wobbling movement of the drill head (1).

18. The device as claimed in claim 17, characterized in that the drill head (1) has, on its side remote from the rock face, at least one continuation (9, 9', 9") which at least virtually penetrates the receiving end (12) of the conveying line (10) by virtue of the wobbling movement.

19. The device as claimed in claim 17 or 18, characterized in that means for reducing the size at least of large pieces of drilled material are provided in the region adjoining the receiving end (12) of the conveying line (10).

20. The device as claimed in claim 19, characterized in that the means intended for reducing the size comprise breaker ribs (13) extending transversely in the cross section of the conveying line (10).

21. The device as claimed in one of [lacuna] 17 to 20, characterized in that the receiving end (12) is of partially annular design in cross section.

22. The device as claimed in one of claims 17 to 21, characterized that means for blowing conveying air into the drill head space (O) are provided.